

## FOREST ROAD EXCISE TAX SUMMARY SHEET

Region: Southeast

Timber Sale Name: Orr 20

Application Number: 75785

### Excise Tax Applicable Activities

Construction: 125 linear feet

*Road to be constructed (optional and required) but not abandoned*

Reconstruction: 900 linear feet

*Road to be reconstructed (optional and required) but not abandoned*

Abandonment: 5230 linear feet

*Abandonment of existing roads not reconstructed under the contract*

Deactivation: 0 linear feet

*Road to be made undrivable but not officially abandoned*

Pre-Haul Maintenance: 11290 linear feet

*Existing road to receive maintenance work (specifically required by the contract) prior to haul*

### Excise Tax Exempt Activities

Temporary Optional Construction: 0 linear feet

*Optional roads to be constructed and then abandoned*

Temporary Optional Reconstruction: 0 linear feet

*Optional roads to be reconstructed and then abandoned*

New Abandonment: 0 linear feet

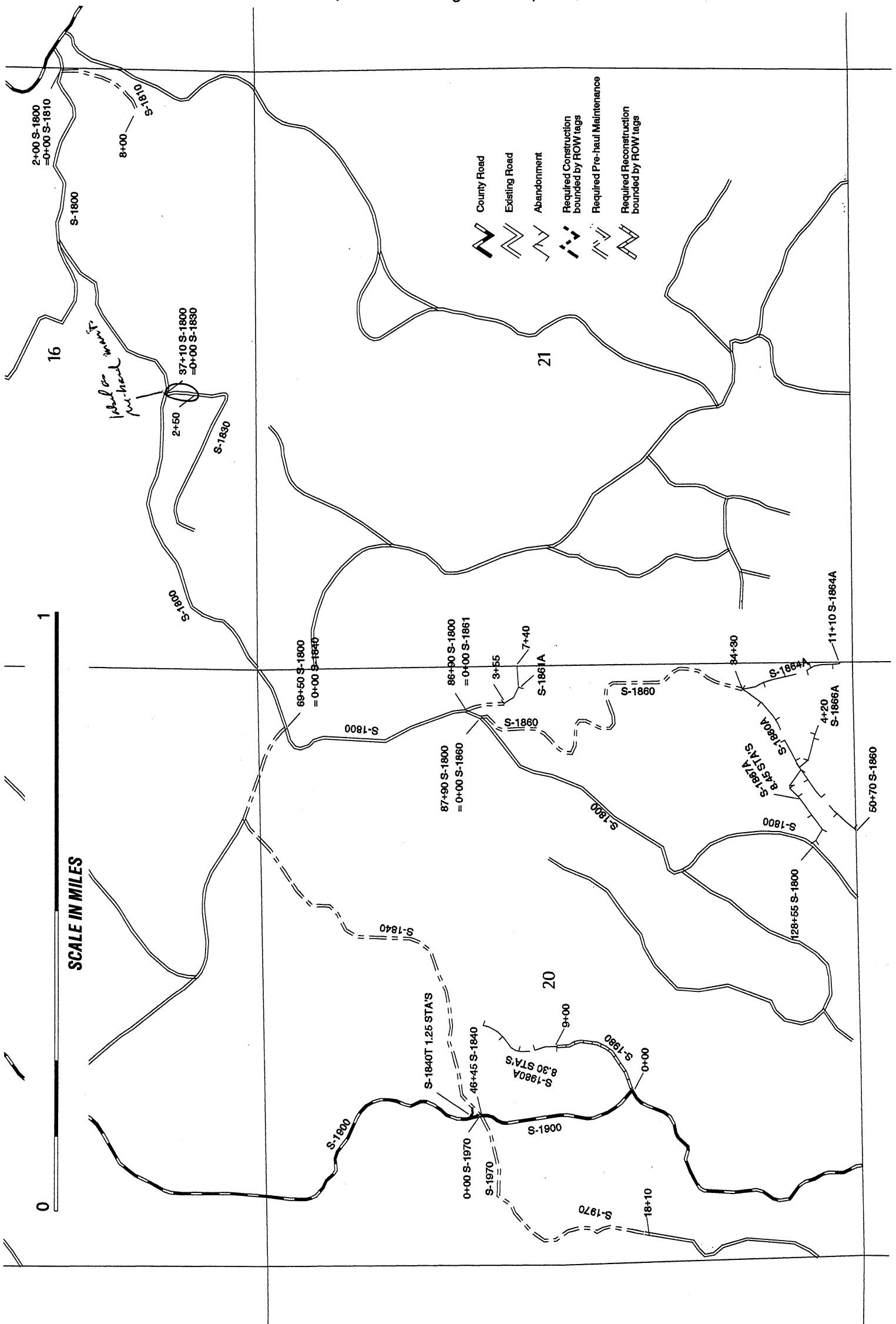
*Abandonment of roads constructed or reconstructed under the contract*

	<u>S-1800</u>	<u>S-1810</u>	<u>S-1830</u>	<u>S-1840</u>	<u>S-1840T</u>	<u>S-1860</u>	<u>S-1860A</u>	<u>S-1861</u>	<u>S-1861A</u>	<u>S-1864A</u>	<u>S-1866A</u>	<u>S-1867A</u>	<u>S-1970</u>	<u>S-1980</u>	<u>S-1980A</u>	<u>Total</u>
STA's Purch. Maint	128.55															128.55
STA's Pre-haul Maint		8.00	2.50	46.45		34.30		3.55					18.10			112.90
STA's New Construction																1.25
STA's Reconstruction														9.00		9.00
STA's Abandonment (No Haul)																
Undrivable Water Bars						16.40		3.85	11.10	4.20	8.45				8.30	52.30
STA's Surface Ripping						5		3	3	3	3				2	19
Culverts to be Removed						16.40		3.85	11.10	4.20	8.45				7.00	51.00
STA's Slash Scattering						16.40		3.85	11.10	4.20	8.45				1	1.00
LBs Grass Seed						13		5	13	3	7				7.00	51.00
LBS Fertilizer						23		8	23	6	12				11	48
																83
STA's Ditched Road	128.55												0.50			129.05
STA's Outslope Road		8.00	2.50	46.45	1.25	34.30		3.55					18.10	9.00		123.15
Culverts to be Installed	2															3
	18"x32', 18"x34'					12"x36'										
Drivable Water Bars to be Installed		4		4		1							1	2		12
Rolling Dips to be Installed			1	8		4							5			18
STA's Final Maintenance (Grade/Shape, Ditch Clean, Etc.)	128.55												18.10			146.65
STA's Deactivation		8.00	2.50	46.45	1.25	34.30		3.55						9.00		105.05
STA's Final Grading		8.00	2.50	46.45	1.25	34.30		3.55						9.00		105.05
Drivable Water Bars		5	0	3	1	5		1						2		17
LBs Grass Seed	1	9	2	37	1	28		2					15	7		102
LBs Fertilizer	2	15	3	64	2	47		4					25	12		174
STA's Right of Way Posted					1.25									9.00		10.25

SALE NAME: Orr 20  
AGREEMENT NO.: 75785  
GRANT: Common School, Agricultural School

REGION: Southeast  
COUNTY: Chelan

                    Z                    



STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES  
DOUG SUTHERLAND, COMMISSIONER OF PUBLIC LANDS

TIMBER SALE ROAD PLAN  
SECTION 16 & 20, TOWNSHIP 21 NORTH, RANGE 20 EAST, W.M.  
CHELAN COUNTY

AGREEMENT NO.: 75785

DATE: MAY 10, 2004

SECTION 0 - SCOPE OF PROJECT

This project includes but is not limited to construction including:

- clearing;
- grubbing;
- right of way debris disposal;
- excavation and/or embankment to subgrade;
- acquisition and application of grass seed and fertilizer.

This project includes, but is not limited to reconstruction including:

- brushing right of way;
- clearing existing excavation and embankment slopes;
- grubbing existing excavation and embankment slopes;
- right of way debris disposal;
- widening road segments;
- grading and shaping existing road surface;
- construction of rolling dips;
- road deactivation;
- acquisition and application of grass seed and fertilizer.

This project includes, but is not limited to pre-haul maintenance including:

- reshaping ditches;
- installing additional culverts;
- constructing rolling dips;
- constructing drivable water bars;
- constructing catch basins and headwalls;
- cleaning culvert inlets and outlets;
- removal of slash from road surface;
- removal of existing undrivable water bars;
- grading and shaping existing road surface and turnouts;
- road deactivation;
- acquisition and application of grass seed and fertilizer.

This project also includes but is not limited to light abandonment including:

- ripping of road surface;
- construction of undrivable water bars;
- placing of slash on road surface;
- acquisition and application of grass seed and fertilizer.

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SECTION 1: GENERAL CLAUSES

SECTION 1.1: GENERAL: GENERAL CLAUSES

- 1.1-1  
Clauses in this plan apply to all construction, reconstruction, or pre-haul maintenance including landings unless otherwise noted.
- 1.1-2  
Construction, reconstruction or pre-haul maintenance of the following roads is required. All roads shall be constructed, reconstructed or pre-haul maintained on the State's location and in accordance with this Road Plan.

<u>Road</u>	<u>Station</u>	<u>Type</u>
S-1800	44+70	Pre-haul Maintenance*
S-1800	50+20	Pre-haul Maintenance*
S-1810	0+00 to 8+00	Pre-haul Maintenance
S-1830	0+00 to 2+50	Pre-haul Maintenance
S-1840	0+00 to 46+45	Pre-haul Maintenance
S-1840T	0+00 to 1+25	New Construction
S-1860	0+00 to 34+30	Pre-haul Maintenance
S-1861	0+00 to 3+55	Pre-haul Maintenance
S-1970	0+00 to 18+10	Pre-haul Maintenance
S-1980	0+00 to 9+00	Reconstruction

\*Cross drain installation.

- 1.1-3  
Abandonment of the following roads is required. All roads shall be abandoned in accordance with this Road Plan.

<u>Road</u>	<u>Station</u>	<u>Type</u>
S-1860A	34+30 to 50+70	Light Abandonment
S-1861A	3+55 to 7+40	Light Abandonment
S-1864A	0+00 to 11+10	Light Abandonment
S-1866A	0+00 to 4+20	Light Abandonment
S-1867A	0+00 to 8+45	Light Abandonment
S-1980A	9+00 to 17+30	Light Abandonment

- 1.1-4  
If the purchaser desires a road location or design change, a revised road plan shall be submitted to the State for consideration.
- 1.1-9  
On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock subsurface springs, saturated ground, and unstable soil.

SECTION 1.2 - GENERAL: CONSTRUCTION CONSTRAINTS

- 1.2-1  
The construction, reconstruction, pre-haul maintenance or abandonment of any roads specified herein shall not be permitted between November 1 and May 1 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2-2

Purchaser shall not use roads constructed, reconstructed or maintained under this Road Plan for hauling, other than timber cut on the right of way, without written approval from the Contract Administrator.

SECTION 1.2.1 - GENERAL: CONSTRUCTION CONSTRAINTS:  
CONSTRUCTION SEQUENCE

1.2.1-1

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Culverts, rolling dips and drivable water bar (excluding deactivation) shall be installed in completed subgrade as construction progresses.

SECTION 1.3 - GENERAL: HAULING CONSTRAINTS

1.3-2

On the following roads, timber haul shall not be permitted between the dates listed unless authorized, in writing, by the Contract Administrator.

<u>Road</u>	<u>Closure Period</u>
S-1800	Nov. 1 to May 1
S-1900*	Nov. 1 to May 1

\*County Road – native surface

SECTION 1.5 - GENERAL: ROAD MAINTENANCE

1.5-1

Maintenance on the following roads shall be performed in accordance with Forest Access Road Maintenance Specifications.

<u>Road</u>	<u>Stations</u>
S-1800	0+00 to 128+55
S-1810	0+00 to 8+00
S-1830	0+00 to 2+50
S-1840	0+00 to 46+45
S-1840T	0+00 to 1+25
S-1860	0+00 to 34+30
S-1861	0+00 to 3+55
S-1970	0+00 to 18+10
S-1980	0+00 to 9+00

1.5-3

On the following roads, snowplowing shall not be permitted unless authorized, in writing, by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
S-1800	0+00 to 128+55
S-1900*	0+00 to 26+90

\*County road – native surface

1.5-4

At termination of haul, final maintenance shall be performed on the following roads. At minimum, final maintenance shall consist of blading the road with a motor grader, removing berms, crowning or outslowing the road as specified in the Typical Section Sheet and/or Clause 6.1-1, reshaping rolling dips and/or water bars to specification, pulling ditches and cleaning culvert inlets and outlets. The finished road surface shall drain freely and shall be smooth, firm and free of chuckholes.

<u>Road</u>	<u>Stations</u>
S-1800	0+00 to 128+55
S-1970	0+00 to 18+10

SECTION 2 - CLEARING

SECTION 2.1 - R/W TIMBER

2.1-1

Fell all vegetative material larger than 2 inches dbh or over 4 feet high between the marked right-of-way boundaries or if not marked in the field, between clearing limits specified on the Typical Section Sheet.

SECTION 3 - GRUBBING

SECTION 3.1- GRUBBING: GENERAL

3.1-1

All stumps shall be removed that fall between grubbing limits shown on the Typical Section Sheet. Those with undercut roots shall be removed.

3.1-2

Grubbing limits are defined as the entire area between the external limits shown on the Typical Section Sheet.

SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

SECTION 4.1 - DEBRIS DISPOSAL AND REMOVAL: GENERAL

4.1-1

Right-of-way debris is defined as all non-merchantable vegetative material larger than one cubic foot in volume, within the grubbing limits.

SECTION 4.2 - DEBRIS DISPOSAL AND REMOVAL: PLACEMENT

- 4.2-1 Right-of-way debris shall be scattered.
- 4.2-2 Right-of-way debris shall not be placed against standing timber.

SECTION 5 - EXCAVATION

SECTION 5.1 - EXCAVATION: GENERAL

- 5.1-1 Unless controlled by construction stakes or specific design sheets herein, roads shall be constructed in accordance with dimensions shown on the Typical Section Sheet.
- 5.1-2 Purchaser shall not bury merchantable material.
- 5.1-3 On the following road, road grade and alignment shall conform to the State's marked location and drawings. Grade and alignment shall have smooth continuity without abrupt changes in direction. Maximum grades and minimum curve radii are as listed below.

<u>Road</u>	<u>Stations</u>	<u>Min. Rad</u>	<u>Max. Grade</u>	
			<u>Favorable</u>	<u>Adverse</u>
S-1840T	0+00 to 1+25	75'	8%	N/A

- 5.1-4 Except as designated on the curve widening list, extra widening on the inside of curves shall be as indicated below.
- |              |                               |
|--------------|-------------------------------|
| 2 feet extra | 80 to 100 foot radius curves. |
| 4 feet extra | 50 to 79 foot radius curves.  |

- 5.1-5 On the following roads, where sided slopes are 0% to 15%, cut at centerline shall not exceed one foot unless approved by the Contract Administrator.

<u>Road</u>	<u>Stations</u>
S-1840T	0+00 to 1+25
S-1980	0+00 to 9+00



5.1-6

On the following roads, the existing subgrade shall be widened to the dimensions shown on the Typical Section Sheet.

<u>Road</u>	<u>Stations</u>
S-1810	0+00 to 8+00
S-1830	0+00 to 2+50
S-1840	0+00 to 46+45
S-1860	0+00 to 34+30
S-1861	0+00 to 3+55
S-1970	0+00 to 18+10
S-1980	0+00 to 9+00

5.1-7

Roads shall be constructed or reconstructed to the dimensions shown on the Typical Section Sheet, within the tolerance listed below. Tolerance classes for each road are listed on the Typical Section Sheet.

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road Width (feet)	+1.5	+1.5	+2.0
Subgrade elevation (feet+/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

5.1-8

Excavation slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>
Common Earth (on side slopes of 55%).....	1:1
Common Earth (55% to 70% sideslopes).....	¾:1
Common Earth (on slopes over 70%).....	½:1
Fractured or loose rock.....	½:1
Hardpan or Solid rock.....	¼:1

5.1-9

Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

5.1-10

Except as construction staked or designed. Embankments shall be widened as follows:

<u>Height at Centerline</u>	<u>Subgrade Widening</u>
Less than 6 feet.....	2 feet
6 feet or over.....	4 feet

5.1-11

Embankment slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment Slope Ratio</u>
Common Earth and rounded gravel	1-1/2:1
Angular rock	1-1/4:1
Sandy soil	2:1

5.1-12

Organic material shall be excluded from embankment.

5.1-14

Waste material may be deposited adjacent to the road prism on side slopes up to 55 percent if the waste material is compacted and more than 100 feet away from live streams. On side slopes of 55 percent or more, all excavation shall be end hauled or pushed to designated embankment sites. All waste embankments shall be compacted in horizontal layers not exceeding 2 feet.

5.1-21

Waste material shall not be deposited within 50 feet of a cross drain culvert installation.

SECTION 5.2 - EXCAVATION: PIONEER ROADS

5.2-1

Road pioneering operations shall not undercut the final cut slope, deposit excavated material outside the clearing limits or restrict drainage.

SECTION 5.3 - EXCAVATION: COMPACTION

5.3-1

All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over the entire width of the lifts. Side hill embankments too narrow to accommodate excavation equipment may be placed by end dumping or side casting until sufficiently wide to support the equipment.

SECTION 5.4 - EXCAVATION: SEDIMENTATION

5.4-1

Sediment bearing runoff shall not be permitted to enter into streams.

5.4-3

On the following road, purchaser shall seed and fertilize cut and fill slopes. Application rate shall be 35 lbs. seed per acre and 60 lbs. fertilizer per acre. Seed and fertilizer shall be provided by the purchaser. Seed mix shall be: intermediate wheatgrass 15 lbs., smooth brome 10 lbs., and hard fescue 10 lbs. Seed shall be certified. Fertilizer shall be 16-16-16 or other fertilizer as approved, in writing, by the contract administrator. Seed and fertilizer shall be applied between October 1 and November 15, unless otherwise approved by the Contract Administrator, in writing.

<u>Road</u>	<u>Stations</u>	<u>Estimated Quantity*</u>
S-1800	44+70, 50+20	1 lb grass seed/ 2lbs fertilizer

\*Quantities are estimate only. Actual quantities may vary and are the responsibility of the purchaser.

SECTION 5.5 - EXCAVATION: SUBGRADE COMPACTION

5.5-1

Finished subgrade shall be shaped as specified in Clause 6.1-1 and as shown on the Typical Section Sheet. Surface shall be graded and compacted to a uniform, firm, rut-free surface to ensure runoff in an even, unconcentrated manner.

SECTION 6 - DRAINAGE

SECTION 6.1 - DRAINAGE: SURFACE DRAINAGE

6.1-1

On the following roads, surfaces shall be shaped to augment the escape of surface runoff.

<u>Road</u>	<u>Stations</u>	<u>Shape of Road Surface</u>
S-1800	0+00 to 128+55	Crown 4 inches at centerline.*
S-1810	0+00 to 8+00	Outslope 4 inches in 10 feet.
S-1830	0+00 to 2+50	Outslope 4 inches in 10 feet.**
S-1840	0+00 to 46+45	Outslope 4 inches in 10 feet.
S-1840T	0+00 to 1+25	Outslope 4 inches in 10 feet.
S-1860	0+00 to 34+30	Outslope 4 inches in 10 feet.
S-1861	0+00 to 3+55	Outslope 4 inches in 10 feet.
S-1970	0+00 to 18+10	Outslope 4 inches in 10 feet.
S-1980	0+00 to 9+00	Outslope 4 inches in 10 feet.

\*Falls under Purchaser Maintenance. Includes some portions with ditches left and right.  
\*\*Falls under Purchaser Maintenance.

6.1-2

Berms shall be removed from road shoulders to permit escape of runoff.

SECTION 6.2 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES

SECTION 6.2.1 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES: GENERAL

6.2.1-1

On the following roads, Purchaser shall furnish, install and maintain galvanized AASHTO specification No. M36 or corrugated polyethylene tubing AASHTO classification "Type S" and AASHTO designation No. M294 culverts as designated on the Culvert List.

<u>Road</u>	<u>Stations</u>
S-1800	44+70, 50+20
S-1860	0+05

6.2.1-2

Annular corrugated bands and culvert ends shall be used on metal culverts. On culverts 24 inches in diameter and smaller, bands shall have a minimum width of 12 inches; on culverts over 24 inches in diameter, bands shall have a minimum width of 24 inches. Manufacturers approved connectors shall be used for corrugated polyethylene tubing.

SECTION 6.2.2 - DRAINAGE: CULVERTS/DOWNSPOUTS/FLUMES: INSTALLATION

6.2.2-1

Culvert, downspout, flume and energy dissipater installation shall be in accordance with Culvert and Drainage Specification Detail and the National Corrugated Metal Pipe Association Installation Manual for Corrugated Steel Drainage Structures. Polyethylene tubing shall be installed in a manner consistent with the manufacturer's recommendations.

6.2.2-3

Cross drains and surface culverts on road grades in excess of 3% shall be skewed at least 30 degrees from perpendicular to the road centerline , except that cross drain culverts at the low points of dips in road shall not be skewed.

6.2.2-4

Cross drain culverts shall be installed at a slope steeper than the incoming ditch grade, but not less than 3% nor more than 10%.

6.2.2-7

On the following road, drainage structure outfalls shall not terminate directly on unprotected soil that will erode. Downspouts, flumes, and energy dissipaters shall be installed to prevent erosion. Energy dissipaters shall consist of hand placed rocks weighing at least 15 pounds. Rock shall extend a minimum of 1 foot to each side of the culvert at the outlet and 2 feet beyond the outlet.

<u>Road</u>	<u>Stations</u>
S-1800	44+70, 50+20

6.2.2-8

On the following roads, culverts shall be installed, and catch basins and headwalls constructed prior to timber haul.

<u>Road</u>	<u>Stations</u>
S-1800	44+70, 50+20
S-1860	0+05

SECTION 6.3 - DRAINAGE: DITCHES

6.3-1

On the following road, ditch shall be reshaped in accordance with dimensions shown on the Typical Section Sheet and shall drain freely to culverts, rolling dips and ditch outs.

<u>Road</u>	<u>Stations</u>
S-1970	11+60 to 12+10

SECTION 6.4 - DRAINAGE: CATCHBASINS

6.4-1

Catch basins shall be constructed to resist erosion. Minimum dimensions are: five feet wide and six feet long with back slopes consistent with Clause 5.1-8: Excavation-Slopes.

SECTION 6.5 - DRAINAGE: HEADWALLS

6.5-1

Hand placed rock shall be installed at the inlet of all installed culverts. Rocks shall weigh at least 15 lbs. Rock shall extend a minimum of 1 foot above the top of the inlet and 2 feet on each side. No other method of armoring may be used without prior written approval of the Contract Administrator. All headwall work shall be completed prior to timber haul.

SECTION 6.6 - DRAINAGE: DRIVABLE WATER BARS

6.6-1

On the following roads, drivable water bars shall be constructed in accordance with the Drivable Water Bar Detail sheet at locations as specified on the Drivable Water Bar List. **DRIVABLE WATER BARS SHALL BE INSTALLED AT THE TIME OF CONSTRUCTION. DRIVABLE WATER BARS MAY BE BLADED OUT DURING HAUL AT THE DISCRETION OF THE CONTRACT ADMINISTRATOR.** Drivable water bars shall be installed with a crawler tractor. Use of other equipment shall not be permitted without prior written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
S-1810	0+00 to 8+00
S-1840	0+00 to 15+85
S-1970	0+00 to 16+90
S-1980	0+00 to 9+00

SECTION 6.7: DRAINAGE: ROLLING DIPS

6.7-1

On the following roads rolling dips shall be constructed in accordance with the Rolling Dip Detail sheet at locations as specified on the Rolling Dip List. **ROLLING DIPS SHALL BE INSTALLED AT THE TIME OF CONSTRUCTION AND SHALL BE CONTINUOUSLY MAINTAINED IN AN OPERABLE CONDITION.** Rolling dips shall be installed with a crawler tractor. Use of other equipment shall not be permitted without prior written approval of the Contract Administrator.

<u>Road</u>	<u>Stations</u>
S-1830	0+00 to 2+50
S-1840	0+00 to 46+45
S-1860	0+00 to 34+30
S-1970	0+00 to 18+10

## SECTION 9 - ROAD AND LANDING CLOSURES/DEACTIVATION

### SECTION 9.1 - ROAD AND LANDING DEACTIVATION: ROAD DEACTIVATION

#### 9.1-1

On the following roads, deactivation shall consist of:

- outsloping the surface at a minimum of 4 percent;
- constructing drivable water bars in conformance with the attached "Drivable Water Bar Detail" at a spacing, which will produce a vertical drop of no more than 30 feet between water bars, and with a maximum spacing of 300 feet, or at locations designated by the Contract Administrator;
- skewing water bars at least 30 degrees from perpendicular on roads in excess of 3 percent grade.

<u>Road</u>	<u>Stations</u>
S-1810	0+00 to 8+00
S-1830	0+00 to 2+50
S-1840	0+00 to 46+45
S-1840T	0+00 to 1+25
S-1860	0+00 to 34+30
S-1861	0+00 to 3+55
S-1980	0+00 to 9+00

#### 9.1-3

On the following roads, deactivation shall consist of:

Revegetation of landings, cut slopes and fill slopes. Application rate shall be 35 lbs of seed mix per acre and 60 lbs. of fertilizer per acre. Seed mix shall be: intermediate wheatgrass 10 lbs. per acre, smooth brome 10 lbs. per acre, hard fescue 10 lbs. per acre. Seed shall be certified. Fertilizer shall be 16-16-16 or other fertilizer as approved in writing by the contract administrator. Seed and fertilizer shall be applied between October 1 and November 15.

<u>Road</u>	<u>Stations</u>	<u>Estimated Quantity*</u>
S-1810	0+00 to 8+00	9 lbs grass seed/ 15 lbs fertilizer
S-1830	0+00 to 2+50	2 lbs grass seed/ 3 lbs fertilizer
S-1840	0+00 to 46+45	37 lbs grass seed/ 64 lbs fertilizer
S-1840T	0+00 to 1+25	1 lb grass seed/ 2 lbs fertilizer
S-1860	0+00 to 34+30	28 lbs grass seed/ 47 lbs fertilizer
S-1861	0+00 to 3+55	2 lbs grass seed/ 4 lbs fertilizer
S-1970	0+00 to 18+10	15 lbs grass seed/ 25 lbs fertilizer
S-1980	0+00 to 9+00	7 lbs grass seed/ 12 lbs fertilizer

\*Quantities are estimate only. Actual quantities may vary and are the responsibility of the purchaser.

SECTION 10 - ROAD AND LANDING ABANDONMENT

10.1-1

On the following roads, light abandonment shall consist of:  
-ripping the road surface to a minimum depth of six inches;  
-scattering of slash onto the road surface as directed by the Contract Administrator;  
-constructing undrivable water bars in conformance with the attached Undrivable Water Bar Detail at locations specified in the Undrivable Water bar List, or at locations designated by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
S-1860A	34+30 to 50+70	Light
S-1861A	3+55 to 7+40	Light
S-1864A	0+00 to 11+10	Light
S-1866A	0+00 to 4+20	Light
S-1867A	0+00 to 8+45	Light
S-1980A	9+00 to 17+30*	Light

\*No surface ripping stations 16+00 to 17+30

10.1-2

On the following road, Purchaser shall remove existing culvert and leave the resulting trench open with excavation slopes consistent with Clause 5.1-8. The trench bottom shall have a minimum width of 5 feet or conform to natural ground. Excavated material shall be placed in a waste area designated by the Contract Administrator.

<u>Road</u>	<u>Stations</u>	<u>Comment</u>
S-1980A	17+00	24" culvert

10.1-3

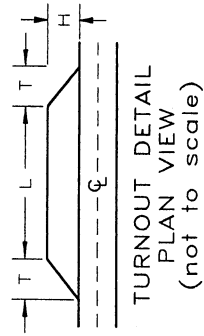
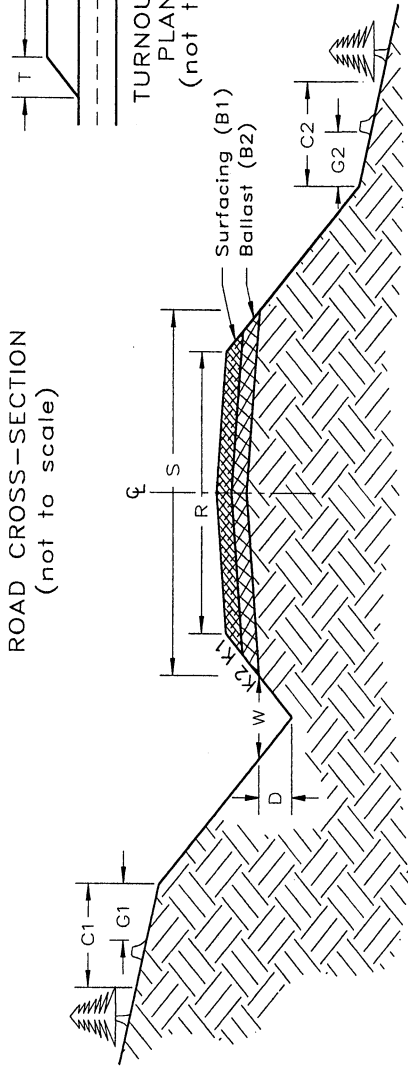
On the following roads, abandonment shall consist of:  
Revegetation of landings, cut slopes, road surface and fill slopes. Application rate shall be 35 lbs of seed mix per acre and 60 lbs. of fertilizer per acre. Seed mix shall be: intermediate wheatgrass 10 lbs. per acre, smooth brome 10 lbs. per acre, hard fescue 10 lbs. per acre. Seed shall be certified. Fertilizer shall be 16-16-16 or other fertilizer as approved in writing by the contract administrator. Seed and fertilizer shall be applied between October 1 and November 15.

<u>Road</u>	<u>Stations</u>	<u>Estimated Quantity*</u>
S-1860A	34+30 to 50+70	13 lbs grass seed/ 23 lbs fertilizer
S-1861A	3+55 to 7+40	5 lbs grass seed/ 8 lbs fertilizer
S-1864A	0+00 to 11+10	13 lbs grass seed/ 23 lbs fertilizer
S-1866A	0+00 to 4+20	3 lbs grass seed/ 6 lbs fertilizer
S-1867A	0+00 to 8+45	7 lbs grass seed/ 12 lbs fertilizer
S-1980A	9+00 to 17+30	7 lbs grass seed/ 11 lbs fertilizer

\*Quantities are estimate only. Actual quantities may vary and are the responsibility of the purchaser.

TYPICAL SECTION SHEET

ROAD CROSS-SECTION  
(not to scale)

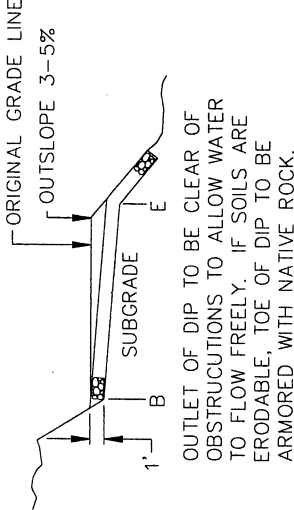
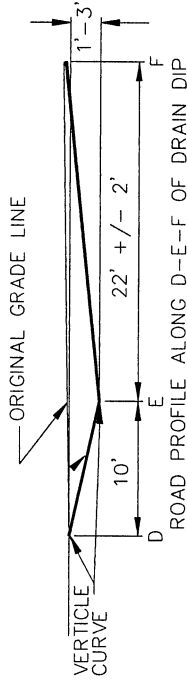
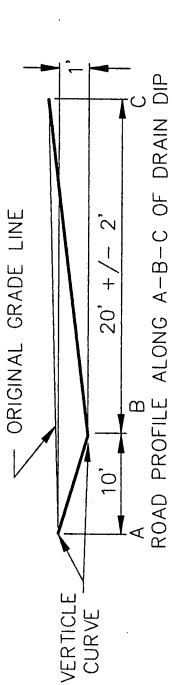


NOTE: CLEARING LIMITS POSTED  
WITH RIGHT OF WAY TAGS AND  
YELLOW FLAGGING.

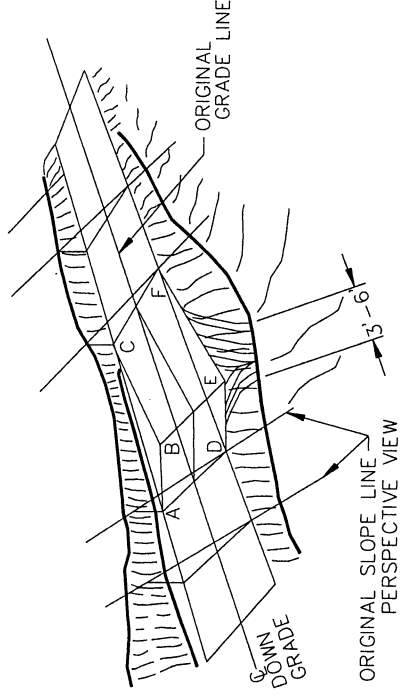
ROAD	CONSTRUCTION/ RECONSTRUCTION/ PRE-HAUL	FROM STATION	TO STATION	TOLERANCE CLASS	SUBGRADE WIDTH S	CROWN @ INCHES @ CENTERLINE	OUTSLOPE INCHES IN 10 FEET	ROAD WIDTH R	DITCH WIDTH W	DITCH DEPTH D	GRUBBING LIMITS G1 G2	CLEARING LIMITS C1 C2	TURNOUT TAPER LENGTH T L W	COMMENTS
S-1810	PRE-HAUL	0+00	8+00	C	12'		4"				N/A	N/A		
S-1830	PRE-HAUL	0+00	2+50	C	12'		4"				N/A	N/A		
S-1840	PRE-HAUL	0+00	46+45	C	14'		4"				N/A	N/A		
S-1840T	CONSTRUCTION	0+00	1+25	C	14'		4"				1' 1'	POSTED		
S-1860	PRE-HAUL	0+00	34+30	C	12'		4"				N/A	N/A		
S-1861	PRE-HAUL	0+00	3+55	C	12'		4"				N/A	N/A		
S-1970	PRE-HAUL	0+00	11+60	C	14'		4"				N/A	N/A		
S-1970	PRE-HAUL	11+60	12+10	C	14'		4"		3'	1'	N/A	N/A		
S-1970	PRE-HAUL	12+10	18+10	C	14'		4"				N/A	N/A		
S-1980	RECONSTRUCTION	0+00	9+00	C	12		4"				1' 1'	POSTED		



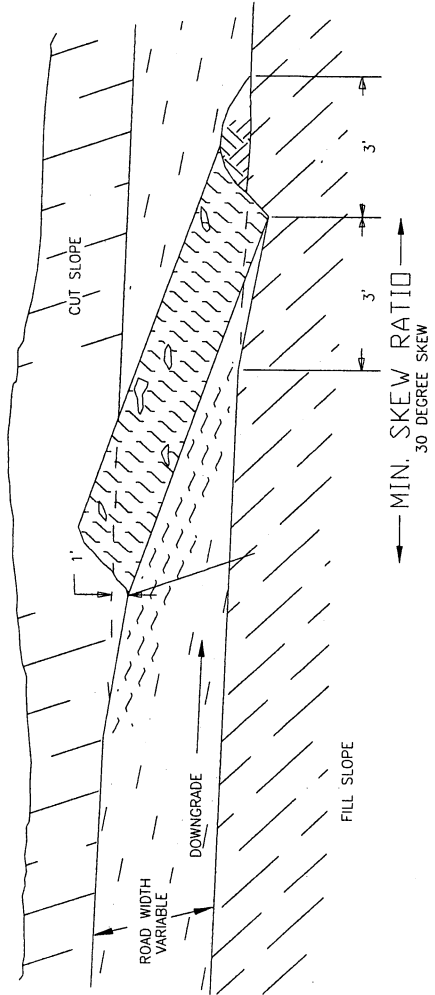
ROLLING DIP DETAIL



NOTE: PLAN OF DIP SHOWN IS FOR OUTSLOPED ROLLING DIP. DIPS MAY BE EITHER INSLOPED OR OUTSLOPED. WHEN INSLOPED, DIPS SHALL DRAIN FREELY INTO DITCHES OR CULVERT INLETS. WHEN OUTSLOPED, THEY SHALL DRAIN FREELY ONTO NATURAL GROUND. WHERE SOILS ARE ERODABLE, OUTLET SHALL BE ARMORED WITH NATIVE ROCK. THE MINIMUM CROSS GRADE FROM "B" TO "E" IS 4% GREATER THAN THE ORIGINAL ROAD GRADE. SKEW LINE B-E TO FIT LOW POINT IN DRAW, IF LOCATED IN NATURAL DRAIN.



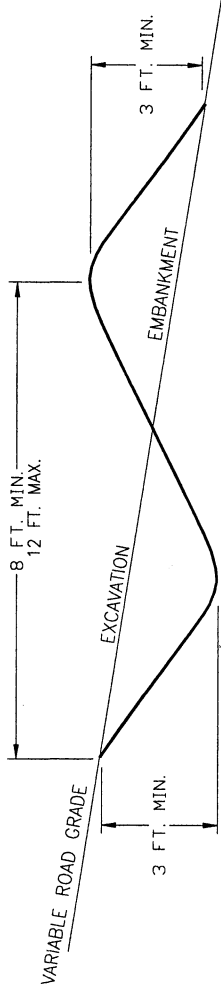
DRIVABLE WATER BAR DETAIL



NOTES

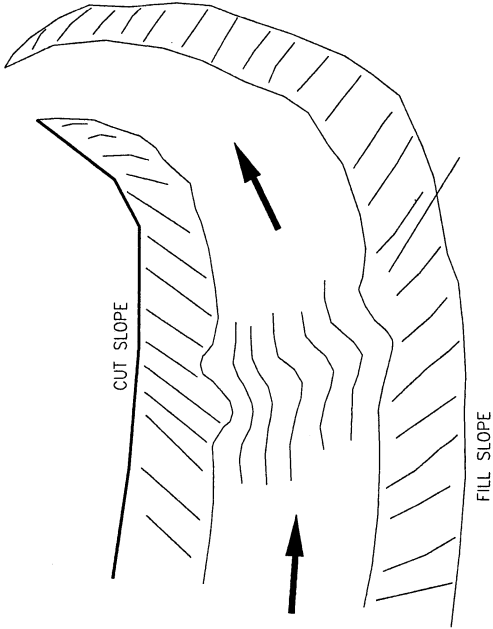
1. ALL WATER BARS SHALL BEGIN AT THE INTERSECTION OF THE ROADBED AND CUT SLOPE AND RUN ACROSS THE ENTIRE WIDTH OF THE ROADBED.
2. ALL WATER BARS SHALL HAVE FREE FLOWING OUTLETS.

# UNDRIVABLE WATER BAR DETAIL



BOTTOM OF EXCAVATION SHALL BE OUTSLOPED SO AS TO DRAIN FREELY.

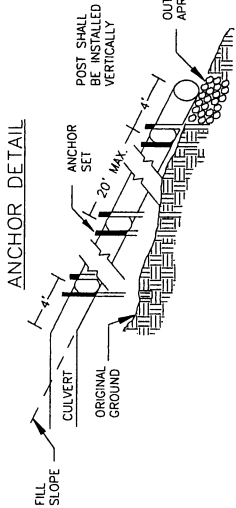
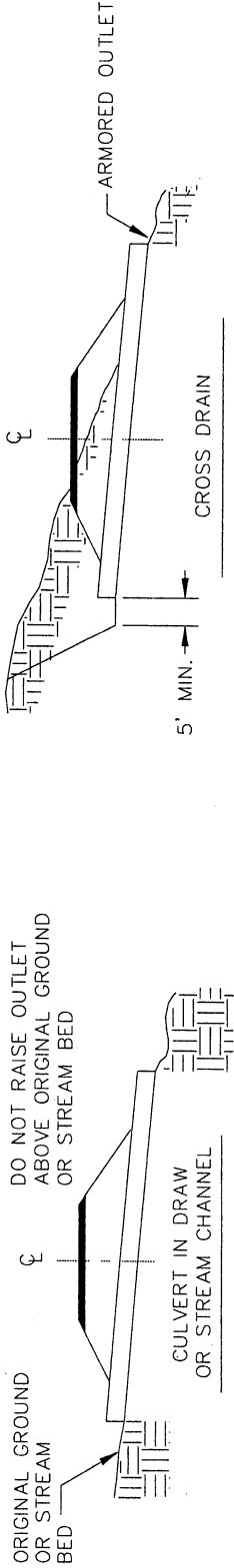
PROFILE VIEW



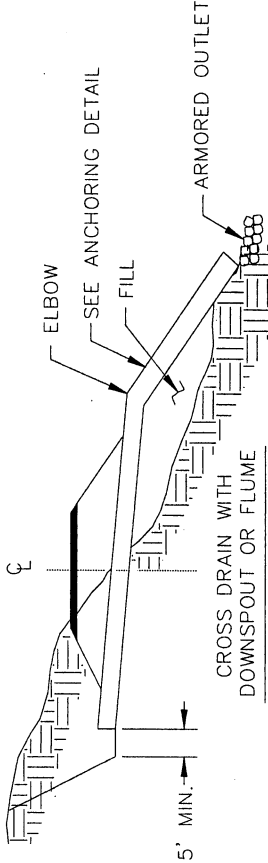
METHOD OF INSTALLATION

NOTE: EMBANKMENT SIDE OF UNDRIVABLE WATER BAR SHALL BE PLACED IN ON SIDE VEHICLE TRAFFIC WILL BE COMING FROM.

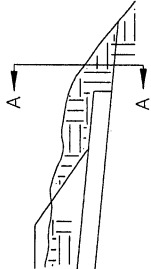
# CULVERT AND DRAINAGE SPECIFICATION DETAIL



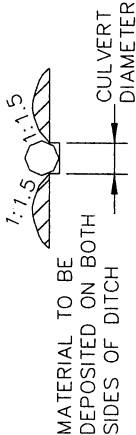
NOTE: MINIMUM COVER OVER CULVERT AT SHOULDER AT INLET SHALL BE 18" OR 1/2 THE CULVERT DIAMETER, WHICHEVER IS GREATER. CATCH BASINS SHALL BE MINIMUM 5' WIDE BY 6' LONG. CUT SLOPES AT CATCH BASINS SHALL BE AS SPECIFIED IN CLAUSE 5.1-8.



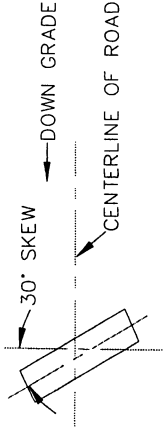
OUTLET DITCH



SECTION A-A



SKIEW DIAGRAM



# CULVERT LIST

Road	L-Station	Diameter	Gauge	Length	Headwall	Outlet
S-1800	44+70	18"	16	32'	Rock Mortared in Place	Energy Dissipater at Outlet
S-1800	50+20	18"	16	34'	Rock Mortared in Place	Energy Dissipater at Outlet
S-1860	0+05	12"	16	36'	Culvert Set in Ditch line	

ROLLING DIP LIST

Road	L-Station	Remarks
S-1830	1+15	Construct As Per Detail with Lead-out Left
S-1840	1+05	Construct As Per Detail with Lead-out Right
S-1840	10+55	Construct As Per Detail with Lead-out Right
S-1840	20+05	Construct As Per Detail with Lead-out Left
S-1840	28+50	Construct As Per Detail with Lead-out Left
S-1840	32+70	Construct As Per Detail with Lead-out Left
S-1840	38+55	Construct As Per Detail with Lead-out Left
S-1840	40+10	Construct As Per Detail with Lead-out Right
S-1840	43+80	Construct As Per Detail with Lead-out Right
S-1860	2+40	Construct As Per Detail
S-1860	9+50	Construct As Per Detail
S-1860	12+10	Construct As Per Detail
S-1860	17+20	Construct As Per Detail
S-1970	1+10	Construct As Per Detail with Lead-out Right
S-1970	3+70	Construct As Per Detail with Lead-out Right
S-1970	9+00	Construct As Per Detail with Lead-out Left
S-1970	13+75	Construct As Per Detail with Lead-out Left
S-1970	18+10	Construct As Per Detail

DRIVABLE WATERBAR LIST

Road	L-Station	Remarks
S-1810	1+75	Construct As Per Detail with Lead-out Left
S-1810	3+25	Construct As Per Detail with Lead-out Left
S-1810	5+00	Construct As Per Detail
S-1810	6+20	Construct As Per Detail with Lead-out Left
S-1840	2+95	Construct As Per Detail with Lead-out Left
S-1840	6+85	Construct As Per Detail with Lead-out Left
S-1840	13+75	Reconstruct As Per Detail
S-1840	15+85	Construct As Per Detail with Lead-out Right
S-1860	4+75	Construct As Per Detail
S-1970	16+90	Reconstruct As Per Detail
S-1980	6+00	Construct As Per Detail
S-1980	8+65	Construct As Per Detail

UNDRIVABLE WATERBAR LIST

Road	L-Station	Remarks
S-1860A	36+90	Construct As Per Detail
S-1860A	39+30	Construct As Per Detail
S-1860A	42+75	Construct As Per Detail
S-1860A	46+90	Construct As Per Detail
S-1860A	50+70	Construct As Per Detail
S-1861A	3+55	Construct As Per Detail
S-1861A	4+55	Construct As Per Detail
S-1861A	7+40	Construct As Per Detail
S-1864A	1+00	Construct As Per Detail
S-1864A	2+50	Construct As Per Detail
S-1864A	11+10	Construct As Per Detail
S-1866A	1+05	Construct As Per Detail
S-1866A	3+35	Construct As Per Detail
S-1866A	4+20	Construct As Per Detail
S-1867A	2+10	Construct As Per Detail
S-1867A	3+15	Construct As Per Detail
S-1867A	6+75	Construct As Per Detail
S-1980	10+00	Construct As Per Detail
S-1980	13+60	Construct As Per Detail

STATE OF WASHINGTON  
DEPARTMENT OF NATURAL RESOURCES

FOREST ACCESS ROAD  
MAINTENANCE SPECIFICATIONS

A. Cuts and Fills

1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1 1/2:1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or watercourses.
3. Undesirable slide materials and debris shall not be mixed into the surface material.

B. Surface

1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
2. Blading must not undercut the back slope at the bottom of the ditch line or cut into geotextile fabric on the road.
3. If required in writing by the SE Region Engineer, water shall be applied as necessary to abate dust.
4. Desirable surface material shall not be bladed off the roadway.
5. Replace surface material lost or worn away.
6. Remove berms except as directed by the State.
7. Barrel spread soft spots to prevent degradation of geotextile.

C. Drainage

1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
3. Add stable material at the outlet end of the cross drain culvert as needed to stabilize the soil.
4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
5. Prevent sediment bearing surface runoff from entering live streams.

D. Structures

Repair bridges, culverts, cattle guards, fences, and other road structures to the condition required by the construction specifications.

E. End of Season

Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.

F. Debris

Remove fallen timber, limbs, and stumps from the slopes or roadway.